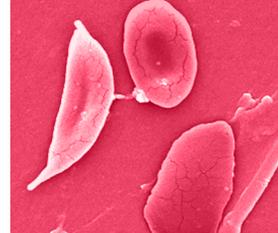




National Heart, Lung, and Blood Institute



# ABOUT THE NHLBI

- The NHLBI is the nation’s leader in supporting research and training on the prevention and treatment of heart, lung, blood, and sleep disorders.
- We were established in 1948 to address rising rates of cardiovascular disease — which includes heart disease and stroke and has been the nation’s leading cause of death for 100 years.
- Our mission has expanded to lead NIH research efforts in lung diseases, including asthma and chronic obstructive pulmonary disease (COPD).
- We lead research on blood transfusion and blood diseases, such as sickle cell disease.
- In 1993, we became the home for the National Center on Sleep Disorders Research (NCSDR), which coordinates NIH programs related to sleep biology and disorders.
- The NHLBI’s research advances scientific knowledge, improves public health, and saves lives.



Gary H. Gibbons, M.D., is director of the National Heart, Lung, and Blood Institute (NHLBI), the third largest institute at NIH. He received his M.D. from Harvard Medical School and has served on the faculty at Harvard, Stanford University, and the Morehouse School of Medicine in Atlanta.

## APPROPRIATIONS HISTORY\*



\*In FY20, NHLBI received \$103 million in supplemental appropriations through the CARES Act (not shown). The FY22 President’s budget request is \$3,846 million.

## Facts and Figures\*\*

FTEs	817
Awards	968
PIs	1,211
ESI Success Rates***	30.2%
K Award Success Rates***	38.6%

## Current Major Initiatives

- The NHLBI supports the **Trans-Omics for Precision Medicine (TOPMed)** program, which has collected whole genome sequences from 155,000+ participants in NHLBI cohort studies who represent many different races, ethnicities, and geographic areas. TOPMed also includes clinical and environmental data and will help researchers decipher the complex mechanisms of chronic heart, lung, blood, and sleep disorders.
- The NHLBI’s new **BioData Catalyst** is a data science platform where researchers can collaborate and innovate. It provides researchers with tools to access, share, and analyze large-scale datasets, including TOPMed data, that they would not be able to collect or maintain on their own.
- The NHLBI supports research to reduce **maternal morbidity and mortality**, especially among African American and American Indian/ Alaska Native women, who are

at higher risk than white women. The NHLBI’s approach takes into account women’s health across their lifespan — before, during, and after their reproductive years.

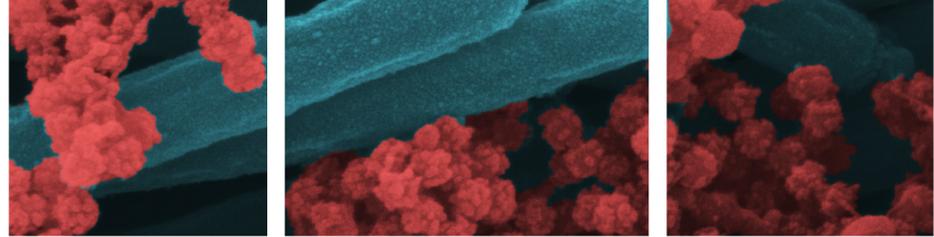
- Because **COVID-19** impacts heart, lung, and blood health, the NHLBI has a multi-pronged strategy to address the pandemic, including clinical trials to identify new therapies and population-based studies to examine outcomes, as well as risk and protective factors.

\*\* FTEs, awards, and extramural principal investigators are FY20 data. Awards = non-competing research project grant awards.

\*\*\* These success rates were averaged over 3 years (FY18,19,20) and calculated as (# awards/# of percentiled applications x 100). For more about percentiles, see <https://grants.nih.gov/grants/peer-review.htm#Summary>.



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A highly magnified image of SARS-CoV-2 virions (red) produced by human airway epithelial cells in the lungs. Credit: Camille Ehre, Ph.D., University of North Carolina School of Medicine.

## Accomplishments in...

### Heart Health

- For more than 70 years, the **Framingham Heart Study (FHS)** has uncovered risk factors and prevention strategies for heart disease, and is now examining links between heart and brain health.
- The SPRINT trial found that intensive blood pressure treatment can reduce the risk of death from cardiovascular disease among people over age 50. These findings helped change the 2017 national **hypertension guidelines**.
- An NHLBI-funded study shows the power of leveraging community norms to bring proven interventions to high-risk communities. **Blood pressure screening at barbershops** helped reduce high blood pressure among African American men in the study.
- The **Bench to Bassinet Program** supports research that has helped many children with congenital heart disease (CHD) thrive. It has amassed genomic data on 10,000+ patients and is being leveraged to conduct a five-year study on **multisystem inflammatory syndrome in children (MIS-C)**, a rare condition affecting some children with COVID-19.

### Lung and Sleep Health

- Based on findings that unique types of asthma require unique therapies, the Precision Interventions for Severe and/or Exacerbation-Prone Asthma (PrecISE) Network is developing **precision medicine approaches for severe asthma**.
- In collaboration with federal and nonfederal partners, the NHLBI developed the **COPD National Action Plan**, which is guiding efforts to reduce the burden of COPD, especially in rural and underserved communities.
- NHLBI-funded research in mice has found that **chronic disturbed sleep** can disrupt the production of a key

hormone that reduces inflammation, which can lead to an increased risk for atherosclerosis.

- Researchers supported by NCSDR discovered the genes and cellular pathways that regulate the **body's internal clock**, earning them the 2017 Nobel Prize in medicine.

### Blood Health

- The **Cure Sickle Cell Initiative** is working to bring new gene-based therapies into clinical trials, and a collaboration with the Bill & Melinda Gates Foundation will help bring these cures to low-resource settings.
- The **Recipient Epidemiology and Donor Evaluation Study (REDS)**, first launched 30+ years ago to help keep the blood supply safe from HIV, is now expanding the reach of antibody tests for COVID-19.
- For people with **hemophilia**, a rare genetic disorder that can cause severe bleeding, NHLBI-funded research helped develop factor replacement therapy — the infusion of clotting proteins into the blood.

### Health Disparities

- Modeled after FHS, the **Jackson Heart Study** and **Strong Heart Study** are shedding light on heart disease risk in African Americans and American Indians, respectively.
- The newly established **RURAL** study will focus on the lung and heart health of people living in rural counties of the Southeastern United States.
- The Disparities Elimination through Coordinated Interventions to Prevent and Control Heart and Lung Disease Risk (**DECIPHeR**) program is studying how to move evidence-based interventions into communities where the burden of chronic disease is high.

## RESPONDING TO COVID-19

The NHLBI established the **Collaborating Network of Networks for Evaluating COVID-19 and Therapeutic Strategies (CONNECTS)** to test therapies that may slow or stop COVID-19 progression. By leveraging its diverse population studies, the NHLBI is examining factors that affect the risk of severe acute illness from SARS-CoV-2 infection. The Institute also has taken a leadership role in:

- The **NIH Community Engagement Alliance (CEAL) Against COVID-19 Disparities**, which aims to

reduce the impact of COVID-19 on the hardest hit communities by providing accurate, timely information about COVID-19 research and preventive measures, including vaccines.

- An initiative launched in February 2021 to address “Long COVID” and other unexplained symptoms that can persist or appear long after acute SARS-CoV-2 infection, known as **post-acute sequelae of SARS-CoV-2 (PASC)**.